UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,633	08/28/2003	Henry P. Gabryjelski	304818.01/MVIR-0722	7727

41505 7590 09/16/2011

WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19104-2891

EXAMINER	
DANG, HUNG Q	

ART UNIT	PAPER NUMBER
2484	

NOTIFICATION DATE	DELIVERY MODE
09/16/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficemonitor@woodcock.com

Office Action Summary	Application No.	Applicant(s)	
	10/650,633	GABRYJELSKI ET AL.	
	Examiner	Art Unit	
	HUNG DANG	2484	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1,11,13-18,20,22,24,25,33-36,38-46,51,53-55,59-72 and 74* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1, 11, 13-18, 20, 22, 24-25, 33-36, 38-46, 51, 53-55, 59-72, and 74* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/28/2011 has been entered.

Response to Arguments

Applicant's arguments filed 06/28/2011 have been considered but are moot in view of the new ground(s) of rejection.

Further, Applicant's arguments with respect to 101 rejections have been fully considered and but they are not persuasive.

On page11, with respect to USC 101 rejections of claims 51, 72, and 74, Applicant argues that “the rejected claims are directed to computer readable storage media, and the examiner has not provided evidence to show that it is the ordinary and customary meaning given to the term by those of skill in the art. Here, the Examiner merely points to a single reference, Nakamur (U.S. Pat. 6, 539,537). (Office Action p. 2). A single reference, however, is insufficient to show that it is the ordinary and customary meaning given to the term by those of skill in the art. Applicants' application is silent on signals and propagating media, however, computer readable medium is discussed. The office action has provided no proof or argument to show that a person having ordinary

skill in the art would interpret a computer readable storage medium as necessarily including signals and propagating media where the specification makes no such claim."

In response, Examiner respectfully disagrees and submits that Nakamur is an evidence to show that a computer readable storage media can be interpreted to comprise signals and propagating media. To further illustrate Examiner's position, Examiner would like to provide evidence that by interpreting a computer readable medium to comprise signals and propagating media, it is the ordinary and customary meaning given the term by those skilled in the art. Let's analyze the plain meaning of a computer readable storage medium and determine whether signals and propagating media are what it is to be a computer readable medium:

1) Signals and propagating media are storage media because it can store energy and make the stored energy transmit so that the stored energy can be received and processed by a receiving device.

2) Signals and propagating media are computer readable because a computer can read the stored energy via a wireless adapter for example.

As such, given the plain and ordinary meaning, signals and propagating media are computer readable storage media.

As such, Applicant's arguments with respect to 101 rejections are not persuasive.

Applicant's arguments on pages 13-15 are fully considered but are moot in view of new grounds of rejections.

Examiner's Note

Discenzo reference cited below claims priority benefits of US application 10/214927 as its continuation-in-part application. US application 10/214927 does support the cited features of using data fusion engines and neural networks to perform utility-based analysis at least in paragraph [0128].

Claim Objections

Claims 13-14 and 74 are objected to because of the following informalities:

Claim 13-14 recite to depend on claim 12, which is a cancelled claim. Applicants are requested to either cancel this claim or amend the claim to be in proper dependent form. To expedite prosecution, Examiner interprets these claims as dependent on claim 1.

Claim 74 recites one computer-readable storage medium having stored thereon computer executable instructions, the computer executable instructions that, when executed by a computer system, cause the computer system to perform the method of claim 37. However, claim 37 has been cancelled. Applicants are requested to either cancel this claim or amend the claim to be in proper dependent form. To expedite prosecution, Examiner interprets claim 74 as "...to perform the method of claim 33."

Appropriate corrections are required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

… a signal does not fall within one of the four statutory classes of Sec. 101.

…. signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

Claims 51, 72, and 74 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

Claims 51, 72, and 74 recite "a computer-readable storage medium having stored thereon … computer-executable components". However, the recited "computer-readable medium" could be reasonably interpreted as encompassing statutory media such as a "ROM", "RAM", "EPROM", "CD-ROM", etc, as well as non-statutory subject matter such as a magnetic, optical, electromagnetic, infrared, … or propagation medium.

A "magnetic, optical, electromagnetic, infrared, … or propagation medium" is neither a process nor a product, (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, a "magnetic, optical, electromagnetic, infrared, … or propagation medium" is a form of energy, in the absence of any physical structure or tangible material.

The Examiner suggests amending the claims to recite the "computer-readable storage medium" as either (1) "computer-readable non-transitory storage medium", (2)

"memory storage device", or (3) "computer-readable storage medium that doesn't consist of a signal" to include tangible computer readable media, while at the same time excluding the intangible media such as signals, carrier waves, etc. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 11, 13-14, 17, 20, 22, 24, 53-55, 65-67, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. (US Patent 6,330,214 – hereinafter Ohta), Fujinami (US 2001/0003518 A1 – hereinafter Fujinami), and Watts et al. (US 2002/0059575 A1 – hereinafter Watts).

Regarding claim 1, Ohta discloses a system that facilitates utilizing an optical medium *(Fig. 14A – wherein the reproduction system utilizing optical disc in the optical disc drive 100)*, the system comprising: a processor *(Fig. 14A; "system control 104")*; provide concurrent reading of a plurality of data streams from the optical medium to a corresponding one of a plurality of buffers *(Fig. 14A; column 16, lines 25-33 – wherein the system simultaneously reproduces separate files recorded in the optical disc in the optical disc drive - the data in each file comprises video and audio streams, each of which is interpreted as one data stream in the plurality of data streams as recited - the data of each stream is supplied to a corresponding one of a plurality of buffers as*

described in column 16, lines 25-32 and further shown in Fig. 14A), the plurality of data streams comprising at least one real-time data stream *(column 16, lines 25-33 – wherein one of the data streams is interpreted as the recited real-time data stream since each frame of the video and audio streams should be played back in a timely manner)*; analyze at least one of the plurality of data streams *(column 16, lines 33-39 – wherein the analysis is performed at least in order to provide timing adjustment between picture and sound)*; infer potential starvation of a first real-time data stream of the at least one real-time data stream *(column 7, lines 57-63 – wherein potential starvation is inferred when the residual data is reduced to a certain level – also although this description is given for simultaneous recording/reproduction, examiner interprets this teachings also applicable to the case of simultaneous reproduction described in column 16, lines 26-33)*; perform a utility-based analysis in connection with buffer access and disc access *(column 6, line 15 – column 8, line 31; column 16, lines 20-43 - although this description is given for simultaneous recording/reproduction, examiner interprets this teachings also applicable to the case of simultaneous reproduction described in column 16, lines 26-33)*; and based on the interference of potential starvation and the utility-based analysis, take remedial action to mitigate the inferred starvation of the first real-time data stream *(column 8, lines 4-6 – wherein reproduction is done so as to make up signal too much reduced due to a starvation caused by latency plus error as further shown in Fig. 6 and described in column 7, lines 57-63 – also although this description is given for simultaneous recording/reproduction, examiner interprets this teachings also applicable to the case of simultaneous reproduction described in column 16, lines 26-33)*.

However, Ohta does not disclose a memory coupled to the processor, the memory having stored thereon instructions that when executed by the processor cause the processor to perform the processes described above, the reading of a first real-time data stream started at time t_x, and the reading of a second data stream of the plurality data streams started at times t_y, where $t_x \neq t_y$, wherein the at least one buffer of the plurality of buffers corresponding to the first real-time data stream has a minimum buffer capacity that is a function of read speed and at least two seek times, the at least two seek times comprising a time to seek to a location logically forward on the disc, and a time to seek to a location logically backward on the disc.

Fujinami discloses reading of a first real-time data stream started at time t_x *([0024] – stream for Ch1 is read at time T0)*, and the reading of a second data stream of the plurality data streams started at times t_y *([0025] – stream for Ch2 is read at time T2)*, where $t_x \neq t_y$ *(T0 is different from T2 as further shown in Figs. 2C)*, wherein the at least one buffer of the plurality of buffers corresponding to the first real-time data stream has a minimum buffer capacity that is a function of read speed and at least two seek times *([0037] – minimum buffer capacity is a function of the output rate, which is the read speed, and two seek times Tp as shown in Fig. 2A and Fig. 2B)*, the at least two seek times comprising a time to seek to a location logically forward on the disc from a first location of a first data stream of the plurality of data streams to a first location of a second data stream of the plurality of data streams *(Fig. 2A and Fig. 2C - Tp from the last portion of Ch1 corresponding to the time period from T0 toT1 to the starting portion of Ch2 corresponding to the time period from T2 to T3)*, and a time to seek to a location

logically backward on the disc from a second location of the second data stream to a second location of the first data stream *(Fig. 2A and Fig. 2C - Tp from the last portion of Ch2 corresponding to the time period from T2 toT3 to the starting portion of Ch1 corresponding to the time period from T4 to T5)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Fujinama into the system taught by Ohta so that a variety of servo-operations can be realized under simple control *(Fujinama, [0036])*.

However, Ohta and Fujinami does not explicitly discloses a memory coupled to the processor, the memory having stored thereon instructions that when executed by the processor cause the processor to perform the processes described above.

Watts discloses a media processing system comprising a memory coupled to the processor, the memory having stored thereon instructions that when executed by the processor cause the processor to perform the functions of the system *([0067]; [0069] – memory 614, processor 602)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Watts into the system taught by Ohta and Fujinami so that functionalities of the system can be implemented via software. So doing would enhance the programmability of the system and facilitate the upgrading of functions.

Regarding claim 11, Ohta also discloses a buffer controller that controls creation and/or use of at least one buffer *(column 16, lines 33-37; "Memory Controller 164" of*

Fig. 14A – wherein at least the memory controller is used to control at least the use of the buffers in the buffer memory).

Regarding claim 13, Ohta also discloses the utility-based analysis is based at least in part on a probabilistic-based determination of cost associated with saving data to the at least one buffer *(column 6, line 15 – column 8, line 48)*.

Regarding claim 14, Ohta also discloses, the utility-based analysis is based at least in part on a probabilistic-based determination of cost associated with retrieving data from the at least one buffer *(column 6, line 15 – column 8, line 48)*.

Regarding claim 17, Ohta also discloses the plurality of data streams comprises a plurality of real-time data streams *(column 16, lines 25-33 – wherein each of the video and audio streams is interpreted as the recited real-time data stream since each frame of the video and audio streams should be played back in a timely manner)*, the system further configured to provide concurrent playback of a plurality of data streams from the optical medium *(Fig. 14A; column 16, lines 26-33 – wherein simultaneous reproduction of a plurality of video and audio streams is provided)*.

Regarding claim 20, see the teachings of Ohta as discussed in claim 1 above. Further, Ohta also discloses a continuity component, the continuity component configured to facilitate concurrent recordation of a plurality of data streams in parallel from the optical medium *(column 7, lines 36-38; column 16, lines 33-37 – wherein concurrent recordation of a plurality of the data stream is performed in parallel from the optical disc to corresponding buffers)*.

Regarding claim 22, Ohta also discloses the remedial action comprises dynamically ordering reading of the data streams *(column 12, lines 43-47; column 16, lines 25-43 – wherein examiner interprets the reading of the data streams must be dynamically ordered in a certain manner at least to provide balance between read and write with respect to the reproduction buffer memory)*.

Regarding claim 24, Ohta also discloses the inferring potential starvation comprises using a probabilistic-based utility analysis *(column 6, line 15 – column 8, line 48; column 16, lines 25-43)*.

Regarding claim 53, Ohta also discloses the system is further configured to perform a utility-based analysis in connection with the concurrent reading *(column 6, line 15 – column 8, line 31 - although this description is given for simultaneous recording/reproduction, examiner interprets this teachings also applicable to the case of simultaneous reproduction described in column 16, lines 26-33, which is corresponding to the recited concurrent reading)*.

Regarding claim 54, Ohta also discloses the utility-based analysis uses a classifier *(column 6, line 15 – column 8, line 31; column 16, lines 20-43 – wherein at least it classifies between recordation vs. reproduction or between recording buffer vs. reproducing buffer etc. – also within a reproduction, it is classified based on phases as shown at least in Figs. 9-10)*.

Regarding claim 55, Ohta also discloses the system is further configured to perform the utility-based analysis by inferring when to initiate recordation *(Figs. 7-8)*.

Regarding claim 65, see the teachings of Ohta, Fujinami, and Watts in the proposed combination as discussed in claim 1 above. Ohta also discloses the system further comprising an optical media drive operatively coupled to read the optical medium *(Fig. 14A – optical disc drive 100)*.

However, in the proposed combination Ohta, Fujinami, and Watts do not disclose the system further configured to: determine a first plurality of seek times, each of the first plurality of seek times based on a seek from an earlier location on optical media to a later location on optical media; determine a second plurality of seek times, each of the second plurality of seek times based on a seek from an later location on optical media to an earlier location on optical media, the first and second plurality of seek times collectively referred to as the combined seek times, wherein the inference is based on at least a first seek time of the first plurality of seek times and at least a second seek time of the second plurality of seek times.

Fujinami further discloses a system configured to: determine a first plurality of seek times, each of the first plurality of seek times based on a seek from an earlier location on optical media to a later location on optical media *(Fig. 2A and Fig. 2C - Tp from the last portion of Ch1 corresponding to the time period from T0 toT1 to the starting portion of Ch2 corresponding to the time period from T2 to T3)*; determine a second plurality of seek times, each of the second plurality of seek times based on a seek from an later location on optical media to an earlier location on optical media *(Fig. 2A and Fig. 2C - Tp from the last portion of Ch2 corresponding to the time period from T2 toT3 to the starting portion of Ch1 corresponding to the time period from T4 to T5)*,

the first and second plurality of seek times collectively referred to as the combined seek times, wherein the inference is based on at least a first seek time of the first plurality of seek times and at least a second seek time of the second plurality of seek times *([0037]; Fig. 2A and Fig. 2C – the first and second seek times are collectively referred to as combined 2Tp as further described in at least [0031]-[0035])*.

The motivation for incorporating the teachings of Fujinami into the system taught by Ohta has been discussed in claim 1 above.

Regarding claim 66, see the teachings of Ohta, Fujinami, and Watts in the proposed combination as discussed in claim 65 above, in which Fujinami further discloses the determining at least a first of the combined seek times comprises: causing the drive to seek from a first location on the optical media to a second position on the optical media *(Fig. 2A; Fig. 2C - the first Tp is determined by causing the drive to seek from the last portion of Ch1 corresponding to the time period from T0 to T1 to the starting position of Ch2 corresponding to the time period from T2 to T3)*. The motivation for incorporating the teachings of Fujinami into the system taught by Ohta has been discussed in claim 1 above.

Regarding claim 67, see the teachings of Ohta, Fujinami, and Watts in the proposed combination as discussed in claim 66 above, in which Fujinami also discloses the causing the drive to seek from a first location on the optical media to a second location on the optical media comprises: reading at least a first amount of data from the first location on the optical media such that an internal media cache of the optical hardware device is not caching data from the second location on the optical media *(Fig.*

2A; Fig. 2B – the first amount is the data amount of Ch1 during the time period from T0 to T1); reading at least a second amount of data from the second location on the optical media *(Fig. 2A; Fig. 2B – the second amount is the data amount of Ch2 during the time period from T2 to T3)*. The motivation for incorporating the teachings of Fujinami into the system taught by Ohta has been discussed in claim 1 above.

Regarding claim 69, see the teachings of Ohta, Fujinami, and Watts in the proposed combination as discussed in claim 66 above, in which Fujinami also disclose causing the drive to seek from a first location on the optical media to a second location on the optical media comprises sending a SEEK command *([0022] – a seek control process is executed for changing the position of the track)*. The motivation for incorporating the teachings of Fujinami into the system taught by Ohta has been discussed in claim 1 above.

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, Fujinami, and Watts as applied to claims 1, 11, 13-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Osakabe (US Patent 6,894,961 – hereinafter Osakabe).

Regarding claim 15, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 1 above. However, Ohta, Fujinami, and Watts do not disclose the optical medium has a guaranteed minimum data transfer rate.

Osakabe also discloses the optical medium has a guaranteed minimum data transfer rate *(column 1, line 39 – column 2, line 30)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Osakabe into the system disclosed by Ohta, Fujinami, and Watts in order to permit recording with minimized errors *(Osakabe: column 1, lines 44-49)*.

Regarding claim 16, see the teachings of Ohta, Fujinami, Watts, and Osakabe in the proposed combination as discussed in claim 15 above, in which Osakabe also discloses the guaranteed minimum data transfer rate is at least about 176 KBps *(column 1, line 39 – column 2, line 30; Table 4; column 8, lines 35-61 - wherein speed of 1X corresponds to 150 KBps - see paragraph [0003] of Green for support)*. The motivation for incorporating Osakabe into the system taught by Ohta, Fujinami, and Watts has been discussed in claim 15 above.

Claims 18 and 70-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, Fujinami, and Watts as applied to claims 1, 11, 13-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Lamkin et al. (US 2002/0078144 – hereinafter Lamkin).

Regarding claim 18, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 17 above. However, Ohta, Fujinami, and Watts do not explicitly at least two of the plurality of real-time data streams corresponding to a CD audio track.

Lamkin discloses at least two of a plurality of real-time data streams corresponding to a CD audio track *(pages 15-16, table A.1.5)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Lamkin into the system taught by Ohta,

Fujinami, and Watts in order to play back CD audio data thus enhancing the applicability of the system.

Regarding claim 70, see the teachings of Ohta, Fujinami, and Watts in the proposed combination as discussed in claim 1 above. Ohta also discloses the plurality of data streams comprises a plurality of data streams corresponding to audio files, a first audio file stream of the plurality of audio streams is a real-time data stream *(column 16, lines 25-33 – wherein one of the data streams that is reproduced for playback is interpreted as the recited real-time data stream since each frame of the audio streams should be played back in a timely manner)*, reading of the first CD audio file stream started at time t_x *(column 16, lines 26-33 - wherein the audio stream in the first audio file is interpreted as the first audio stream)*, reading of a second CD audio file stream of the plurality of CD audio file streams started at time t_y *(column 16, lines 26-33 – wherein the second audio stream is the audio stream recorded in the second file separate from the first file)*, and the reading of the later of the first or second CD audio file streams does not interrupt the reading of the earlier of the first or second CD audio file streams *(column 16, lines 26-33)*.

Fujinami discloses a user can select different starting times for playing back each of the plurality of data streams according to their convenience *([0024]-[0025] – stream for Ch1 is read at time T0, stream for Ch2 is read at time T2, T0 is different from T2 as further shown in Figs. 2C)*.

The motivation for incorporating the teachings of Fujinami into the system taught by Ohta has been discussed in claim 1 above.

However, Ohta, Fujinami, and Watts do not disclose the plurality of data streams comprises a plurality of data streams corresponding to CD audio tracks.

Lamkin discloses the plurality of data streams comprises a plurality of data streams corresponding to CD audio tracks *(pages 15-16, table A.1.5)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Lamkin into the system taught by Ohta, Fujinami, and Watts in order to play back CD audio data thus enhancing the applicability of the system.

Regarding claim 71, Ohta also disclose the second audio track stream is a real-time data stream *(column 16, lines 25-33 – wherein the second data stream that is reproduced for playback is interpreted as a real-time data stream since each frame of the audio streams should be played back in a timely manner)*.

Lamkin discloses the second audio stream is an audio track stream *(Lamkin: pages 15-16, table A.1.5)*.

The motivation for incorporating the teachings of Lamkin into the system taught by Ohta, Fujinami, and Watts has been discussed in claim 70 above.

Claims 25, 33-36, 38-40, 43-46, 51, 72, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Fujinami.

Regarding claim 25, Ohta discloses a method of utilizing optical media, the method comprising: starting to read a first data stream from the optical media at time t_x, the first data stream being a real-time data stream *(column 16, lines 26-33 – wherein each of the video and audio streams is interpreted as the recited real-time data stream*

since each frame of the video and audio streams should be played back in a timely manner); and starting to read a second data stream from the optical media concurrently with the first data stream at time t_y while the first data stream is being read *(column 16, lines 26-33 – wherein the second data stream is the data stream recorded in the second file separate from the first file)*; transferring the first data stream to a first buffer for temporary storage at a sufficient rate to allow transfer of the second data stream without causing starvation of the first data stream *(column 16, lines 33-43 – wherein the transferring is performed to prevent overflow and underflow of the corresponding buffers)*; determining read performance across the optical media to facilitate ascertaining an optical hardware device's ability to read the optical media, the optical hardware device employed to run the optical media, the determining read performance across the optical media comprising: reading at least a first amount of data from a first position on the optical media such that an internal media cache is not concurrently caching the first amount of data when the reading of the first amount of data starts *(column 7, lines 30-63; Fig. 6 – first amount is interpreted to correspond to the amount of data that is read into the buffer when the buffer is initially at the level of 3n)*; and reading at least a second amount of data from a second position on the optical media, wherein the second position is separated from the first position by data representing an increment of playback time that is sufficient for determining characteristic read performances across the optical media *(column 7, lines 30-63; Fig. 6)*; and reading data from other positions on the optical media to determine read performances across substantially all of the optical media *(column 7, lines 30-63; Fig. 6)*.

Ohta does not explicitly disclose t_x is not equal to t_y, and determining seek times across the optical media to facilitate ascertaining an optical hardware device's ability to seek on the optical media, the optical hardware device employed to run the optical media, the determining seek times comprising: dividing the optical media into a number of sections, the number of sections comprising at least a first section and at least a second section, such that an internal cache of the optical hardware device does not pre-cache data from the second section when told to start reading from the first section; and for all ordered pairs of sections comprising any two sections, ensuring that the optical hardware device is reading from the first section and then causing the optical hardware device to seek to the second section to gain characteristic seek performances across the optical media.

Fujinami discloses a user can select different starting times for playing back each of the plurality of data streams according to their convenience *([0024]-[0025] – stream for Ch1 is read at time T0, stream for Ch2 is read at time T2, T0 is different from T2 as further shown in Figs. 2C)*; and determining seek times across the optical media to facilitate ascertaining an optical hardware device's ability to seek on the optical media *(Fig. 2A; Fig. 2B; Fig. 2C – Tp's across the optical media are determined between the reading of corresponding data amounts of Ch1 and Ch2)*, the optical hardware device employed to run the optical media, the determining seek times comprising: dividing the optical media into a number of sections *(Fig. 2A; Fig. 2B; Fig. 2C – each section corresponds to a section storing the data amount of either Ch1, Ch2 between various time periods as shown in Fig. 2C)*, the number of sections comprising at least a first

section and at least a second section *(Fig. 2A; Fig. 2B; Fig. 2C - first section is the section storing data for Ch1 read in the buffer in the time period from T0 to T1, the second section is the section storing the data for Ch2 read in the buffer in the time period from T2 to T3)*, such that an internal cache of the optical hardware device does not pre-cache data from the second section when told to start reading from the first section *(Fig. 2A; Fig. 2B; Fig. 2C – when reading from the first section starts, the amount of data Ch2 from T2 to T3 is not pre-cached because it is not read in yet)*; and for all ordered pairs of sections comprising any two sections, ensuring that the optical hardware device is reading from the first section and then causing the optical hardware device to seek to the second section to gain characteristic seek performances across the optical media *(Fig. 2A; Fig. 2B; Fig. 2C – any pair of sections storing data for Ch1 and Ch2 corresponding to a time period Tc as shown in Fig. 2A, after the first section of the pair is read into the buffer, the optical hardware is caused to seek to the second section during the seek time Tp)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Fujinama into the method taught by Ohta so that a variety of servo-operations can be realized under simple control *(Fujinama, [0036])*.

Regarding claim 33, Ohta also discloses the first amount of data being about 8 MB *(Fig. 6; wherein the amount of 3n of data is interpreted as about 8 MB)*.

Regarding claim 34, Ohta also discloses the increment of time being about 5 minutes *(Fig. 6 - wherein at least the skipped time corresponds to the time period*

between starting reading the first amount of data and start of phase 1 and is interpreted as about 5 minutes).

Regarding 35, Ohta also discloses the second amount of data is substantially equal in size to the first amount of data *(Fig. 6 – wherein each amount of data in "reproduction" periods is interpreted as substantially equal in size)*.

Regarding claim 36, Ohta also discloses the first amount of data is determined based at least in part upon an internal buffer size of the optical hardware device *(Fig. 6 – wherein the amount of data read in each "reproduction period" at least is determined to be less than the available capacity of the buffer)*.

Regarding claim 38, Ohta also discloses all sections are of substantially equal size *(Fig. 6 – wherein the amounts of data read on both sides of the "head move" period are interpreted as having substantially equal size)*.

Regarding claim 39, Ohta also discloses a size of the sections is determined based at least in part upon the an internal buffer size of the optical hardware device *(Fig. 6 – wherein the amounts of data read on both sides of the "head move" period" is determined at least to be less than the available capacity of the buffer)*.

Regarding claim 40, Ohta also discloses ensuring that the optical hardware device is reading from the first section comprises reading an amount of data larger than an internal buffer size of the optical hardware device from a section other than the first and second sections *(Fig. 6 – wherein an internal buffer size is interpreted to 2n, the amount of the data read to fill up to the level of 3n is interpreted as the data from some section other the first and second sections, the first section corresponds to the section*

contain the data read in phase 1 while the second section is interpreted as corresponding to that containing the data read in phase 3).

Regarding claim 43, Ohta also discloses causing the optical hardware device to seek to the second section comprises using a SEEK command *(Fig. 6; column 7, lines 45-55)*.

Regarding claim 44, Ohta also discloses a size of the sections is about 5 minutes *(Fig. 6 - wherein at least the size of data in either "section" is interpreted as about 5 minutes*).

Regarding claim 45, Ohta also discloses ensuring that the optical hardware device is reading from the second section comprises reading an amount of data larger than an internal buffer size of the optical hardware device from the first section *(Fig. 6 – wherein the internal buffer size is interpreted to 2n, the amount of the data read to fill up to the level of 4n is interpreted as the data from first section while the second section is interpreted as corresponding to the section that contains the data read in phase 3)*.

Regarding claim 46, Ohta also discloses determining whether minimum buffer requirements are satisfied, the minimum buffer requirements being a function of read speed and seek times *(column 6, lines 15-40, 60-65; column 7, lines 35-63)*.

Regarding claim 51, Ohta also discloses at least one computer-readable storage medium having stored thereon the following computer executable components: a component that provides for concurrently reading a non-real-time data stream from optical media starting at time t_y *(column 16, lines 25-33; column 18, lines 1-8 - wherein the data streams that are sent to a computer as described in column 18, lines 1-8 are*

interpreted as non-real-time data streams) a and reading a real-time data stream from the optical media starting time t_x *(column 16, lines 25-33 – wherein one of the data streams read out for playback is interpreted as the recited real-time data stream)*.

However, Ohta does not disclose wherein $t_x \neq t_y$.

Fujinami discloses a user can select different starting times for playing back each of the plurality of data streams according to their convenience *([0024]-[0025] – stream for Ch1 is read at time T0, stream for Ch2 is read at time T2, T0 is different from T2 as further shown in Figs. 2C)*;

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the feature that lets user arbitrarily select different starting times for reading each stream as disclosed by Fujinami into the method taught by Ohta in order to provide users with convenience in selecting which stream to be read thus enhancing the user interface of the method.

Claim 72 is rejected for the same reason as discussed in claim 25 above.

Claim 74 is rejected for the same reason as discussed in claim 33 above.

Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta and Fujinami as applied to claims 25, 33-36, 38-40, 43-46, 51, 72, and 74 above, and further in view of King et al. (US 2002/0169996 – hereinafter King).

Regarding claim 41, see the teachings of Ohta and Fujinami as discussed in claim 37 above. However, Ohta and Fujinami do not disclose ensuring that the optical hardware device is reading from the first section comprises sending a READ l0 command with a force unit access (FUA) bit set to one.

King discloses sending a READ I0 command with a force unit access (FUA) bit set to one *([0013])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of King into the method disclosed by Ohta and Fujinami in order to provide reliability of data *(King: [0013])*.

Regarding claim 42, see the teachings of Ohta and Fujinami as discussed in claim 37 above. However, Ohta and Fujinami do not disclose ensuring that the optical hardware device is reading from the second section comprises sending a READ I0 command with a force unit access (FUA) bit set to one.

King discloses sending a READ I0 command with a force unit access (FUA) bit set to one *([0013])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of King into the method disclosed by Ohta and Fujinami in order to provide reliability of data *(King: [0013])*.

Claims 59 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, Fujinami, and Watts as applied to claims 1, 11, 13-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Discenzo et al. (US 2004/0267395 – hereinafter Discenzo).

Regarding claim 59, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 53 above.

However, Ohta, Fujinami, and Watts do not disclose the system is configured to perform the utility-based analysis using at least one data fusion engine.

Discenzo discloses a system configured to perform the utility-based analysis using at least one data fusion engine *([0058] – wherein inference of system's conditions and states is performed using Bayesian networks, fuzzy logic, data fusion engines, hidden Markov Models, decision trees, model-based methods etc.)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one data fusion engine for utility-based analysis as taught by Discenzo into the system disclosed by Ohta, Fujinami, and Watts to improve efficiency and reliability of the system *(Discenzo, [0012])*.

Regarding claim 64, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 53 above.

However, Ohta, Fujinami, and Watts do not disclose the system is configured to perform the utility-based analysis using at least one neural network.

Discenzo also discloses the system is further configured to perform the utility-based analysis using at least one neural network (*[0058]*).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one neural network for utility-based analysis as taught by Discenzo into the system disclosed by Ohta, Fujinami, and Watts to improve efficiency and reliability of the system *(Discenzo, [0012])*.

Claims 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, Fujinami, and Watts as applied to claims 1, 11, 13-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Vasko et al. (US Patent 7,058,712 – hereinafter Vasko).

Regarding claim 60, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 53 above. However, Ohta, Fujinami, and Watts do not disclose the system is further configured to perform the utility-based analysis using at least one support vector machine (SVM).

Vasko discloses the system is further configured to perform the utility-based analysis using at least one support vector machine (SVM) *(column 11, lines 32-42 – wherein inference of utility of system resources is performed using Support Vector Machines or Naïve Bayes)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one support vector machine (SVM) for utility-based analysis as taught by Vasko into the system disclosed by Ohta, Fujinami, and Watts to improve efficiency of the system *(Vasko, column 11, lines 44-46)*.

Regarding claim 61, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 53 above. However, Ohta, Fujinami, and Watts do not disclose the system is further configured to perform the utility-based analysis using at least one naive Bayes model.

Vasko also discloses wherein the system is further configured to perform the utility-based analysis using at least one naive Bayes model *(column 11, lines 32-42 – wherein inference of utility of system resources is performed using Support Vector Machines or Naïve Bayes)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one naive Bayes model for utility-

based analysis as taught by Vasko into the system disclosed by Ohta, Fujinami, and Watts to improve efficiency of the system *(Vasko, column 11, lines 44-46)*.

Claims 62-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, Fujinami, and Watts as applied to claims 1, 11, 13-14, 17, 20, 22, 24, 53-55, 65-67, 69 above, and further in view of Horvitz (US Patent 6,009,452 – hereinafter Horvitz).

Regarding claim 62, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 53 above. However, Ohta, Fujinami, and Watts do not disclose the system is further configured to perform the utility-based analysis using at least one Bayesian network.

Horvitz discloses the system is further configured to perform the utility-based analysis using at least one Bayesian network *(column 22, lines 5-27; column 30, lines 27-30 – wherein inference of probability of state transitions of system is performed using Bayesian Networks or Hidden-Markov models)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one Bayesian network for utility-based analysis as taught by Horvitz into the system disclosed by Ohta, Fujinami, and Watts to improve efficiency of the system *(Horvitz, column 22, lines 23-27)*.

Regarding claim 63, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 53 above. However, Ohta, Fujinami, and Watts do not disclose the system is further configured to perform the utility-based analysis using at least one Hidden Markov Model (HMM).

Horvitz also discloses wherein the system is further configured to perform the utility-based analysis using at least one Hidden Markov Model (HMM) *(column 22, lines 5-27; column 30, lines 27-30 – wherein inference of probability of state transitions is performed using Bayesian networks or Hidden-Markov models)*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of at least one Hidden Markov Model (HMM) for utility-based analysis as taught by Horvitz into the system disclosed by Ohta, Fujinami, and Watts to improve efficiency of the system *(Horvitz, column 22, lines 23-27)*.

Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta, Fujinami, and Watts as applied to claims 1, 11, 13-14, 17, 20, 22, 24, 53-55, 65-67, and 69 above, and further in view of King.

Regarding claim 68, see the teachings of Ohta, Fujinami, and Watts as discussed in claim 66 above. Further, Fujinami also disclose causing the drive to seek from a first location on the optical media to a second location on the optical media *(Fig. 2A; Fig. 2B; Fig. 2C – seek from the last portion of Ch1 to the starting portion of Ch2 or from the last portion of Ch2 to the starting portion of Ch1)*. The motivation for combining Fujinami into the system taught by Ohta has been discussed in claim 1 above.

However, Ohta, Fujinami, and Watts do not disclose sending a read command with a force unit access (FUA) bit set to one to the drive.

King discloses sending a read command with a force unit access (FUA) bit set to one to the drive *([0013])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of King into the system disclosed by Ohta, Fujinami, and Watts in order to provide reliability of data *(King: [0013])*.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is (571)270-1116. The examiner can normally be reached on IFT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THAI Q. TRAN can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung Q Dang/
Examiner, Art Unit 2484

/Thai Tran/
Supervisory Patent Examiner, Art Unit 2484